

WHAT IS CLAIMED IS:

CLAIM 1. In an apparatus for coupling at least one POTS-type telephone device to a radio network, which apparatus comprises coupling means for coupling the at least one POTS-type telephone device to a transceiver of a radio mobile handset connected to the radio network, said coupling means comprising interface means providing at least some central-office functions to the at least one POTS-type telephone device, the improvement comprising:

said coupling means comprising wireless-connectivity transceiver means for communicating with a remote wireless-connectivity-enabled transceiver of a mobile handset connected to a radio network;

said wireless-connectivity transceiver means being operatively connected to said interface means, and comprising means for generating signals for coupling said interface means to said wireless-connectivity-enabled transceiver of a radio mobile handset connected to a radio network, so that the at least one POTS-type telephone device may be coupled to the radio network via a remote mobile handset, whereby the mobile handset is allowed mobility of movement relative to said apparatus.

CLAIM 2. The apparatus for coupling at least one POTS-type telephone device to a radio network according to claim 1, in combination with a remote wireless-connectivity-enabled mobile handset connected a radio network; said mobile handset comprising a wireless-connectivity-enabled transceiver.

CLAIM 3. The apparatus for coupling at least one POTS-type telephone device to a radio network according to claim 1, wherein said wireless-connectivity transceiver means comprises a Bluetooth-wireless connectivity transceiver means.

CLAIM 4. The apparatus for coupling at least one POTS-type telephone device to a radio network according to claim 2, wherein each of said wireless-connectivity transceiver means and said wireless-connectivity-enabled transceiver comprises Bluetooth-wireless-connectivity coupling means.

CLAIM 5. The apparatus for coupling at least one POTS-type telephone device to a radio network according to claim 1, wherein said coupling means comprises docking means for receiving a mobile handset therein, and charging means for recharging the battery of said mobile handset.

CLAIM 6. The apparatus for coupling at least one POTS-type telephone device to a radio network according to claim 1, wherein said coupling means comprises:

a microprocessor;

memory means for said microprocessor;

software means stored in said memory means for controlling said microprocessor;

said microprocessor controlling said wireless-connectivity transceiver means and said interface means for coupling the at least one POTS-type telephone device to the mobile handset for bidirectional communication therebetween for connecting the at least one telephone POTS-

type telephone device to a radio network for at least one of receiving an incoming call and for making an outgoing call via the radio network.

CLAIM 7. The apparatus for coupling at least one POTS-type telephone device to a radio network according to claim 1, wherein said wireless-connectivity transceiver means for communicating with a remote wireless-connectivity-enabled transceiver of a mobile handset connected to a radio network comprises a wireless-connectivity transceiver capable of being paired with any of a wireless-connectivity-enabled TDMA-based, GSM-based, CDMA-based and AMPS-based standard transceiver.

CLAIM 8. The apparatus for coupling at least one POTS-type telephone device to a radio network according to claim 4, wherein said wireless-connectivity transceiver means for communicating with a remote wireless-connectivity-enabled transceiver of a mobile handset connected a radio network comprises a wireless-connectivity transceiver capable of being paired with any of a Bluetooth-wireless-connectivity TDMA-based, GSM-based, CDMA-based, and AMPS-based standard transceiver.

CLAIM 9. The apparatus for coupling at least one POTS-type telephone device to a radio network according to claim 1, wherein said coupling means comprises disconnecting means for disconnecting the pairing of said wireless-connectivity transceiver means with the remote wireless-connectivity-enabled transceiver of a mobile handset when the mobile handset is engaged in a call via the radio network, and for restoring the pairing thereof after the mobile handset has terminated the call.

CLAIM 10. The apparatus for coupling at least one POTS-type telephone device to a radio network according to claim 6, wherein said software means comprises means for disconnecting the pairing of said wireless-connectivity transceiver means with the remote wireless-connectivity-enabled transceiver of a mobile handset upon the mobile handset being engaged in a call via the radio network, and for restoring the pairing thereof after the mobile handset has terminated the call.

CLAIM 11. The apparatus for coupling at least one POTS-type telephone device to a radio network according to claim 1, wherein said coupling means comprises means for connection to the in-premises wiring to which are connected at least one POTS-type telephone device.

CLAIM 12. A method of coupling an apparatus comprising an interface for use with at least one POTS-type telephone device for connecting the at least one POTS-type telephone device to a radio network via a cellular mobile handset having a Bluetooth-enabled transceiver, comprising:

- (a) remotely, wirelessly connecting said interface to the Bluetooth-enabled transceiver of said cellular mobile handset;
- (b) said step (a) comprising pairing a Bluetooth-wireless transceiver of said apparatus to said Bluetooth-enabled transceiver of said cellular mobile handset.

CLAIM 13. The method according to claim 12, wherein said step (a) comprises:

- (c) generating messaging between said interface and said cellular mobile handset representative of telephone signals for establishing call-connection between the telephone set and the cellular mobile handset;
- (d) connecting the telephone set with the radio network via said mobile handset; and
- (e) establishing at least one of an incoming call and an outgoing call on the telephone via the radio network with which said cellular mobile handset communicates.

CLAIM 14. The method according to claim 13, further comprising:

- (c) connecting at least one of an outgoing call made by said cellular mobile handset to the radio network, and an incoming call from the radio network to said cellular mobile handset when said cellular mobile handset is remotely located from said apparatus;
- (d) disabling the connection of said step (b) between said Bluetooth-wireless transceiver of said apparatus and said Bluetooth-enabled transceiver of said cellular mobile handset while said step (c) is in process; and
- (e) repeating said step (b) after said step of connecting of said step (c) has ended.

CLAIM 15. The method according to claim 12, further comprising:

- (c) connecting at least one of an outgoing call made by said cellular mobile handset to the radio network, and an incoming call from the radio network to said cellular mobile handset when said cellular mobile handset is remotely located from said apparatus;
- (d) disabling the connection of said step (b) between said Bluetooth-wireless transceiver of said apparatus and said Bluetooth-enabled transceiver of said cellular mobile handset while said step (c) is in process; and
- (e) repeating said step (b) after said step of connecting of said step (c) has ended.

CLAIM 16. The method according to claim 12, wherein said step (b) comprises:

- (c) connecting said Bluetooth-wireless transceiver of said apparatus to a said Bluetooth-enabled transceiver of one of a TDMA-based, GSM-based, CDMA-based, and AMPS-based standard transceiver of a said cellular mobile handset; and further comprising
- (d) connecting said Bluetooth-wireless transceiver of said apparatus to a said Bluetooth-enabled transceiver of another, different one of a TDMA-based, GSM-based, CDMA-based, and AMPS-based standard transceiver of another said cellular mobile handset.

CLAIM 17. A system for coupling at least one POTS-type telephone device to a radio network, comprising:

interface means coupled to at least one standard telephone device for providing at least some central office functions thereto and for converting analogue signals of said at least one standard telephone device into digital data;

a radio mobile handset connected to a radio network for communication therewith, and having a wireless-enabled transceiver;

coupling means between said interface means and said radio mobile handset for providing bidirectional communication therebetween;

said coupling means comprising wireless-connectivity transceiver means for communicating with said wireless-enabled transceiver of said radio mobile handset, and comprising means for generating signals for coupling said interface means to said wireless-enabled transceiver of said radio mobile handset, so that the at least one POTS telephone device is coupled to the radio network via said radio mobile handset, whereby the mobile handset is allowed mobility of movement.

CLAIM 18. The system according to claim 17, wherein said wireless-connectivity transceiver means comprises a Bluetooth-wireless connectivity transceiver means, and said wireless-enabled transceiver of said radio mobile handset comprises Bluetooth-wireless-connectivity coupling means.

CLAIM 19. The system according to claim 17, further comprising docking means for receiving said mobile handset therein, said docking means comprising charging means for recharging the battery of said mobile handset.

CLAIM 20. The system according to claim 17, wherein said coupling means comprises:

a microprocessor;

memory means for said microprocessor;

software means stored in said memory means for controlling said microprocessor;

said microprocessor controlling said wireless-connectivity transceiver means and said interface means for coupling the at least one POTS-type telephone device to the mobile handset for bidirectional communication therebetween for connecting the at least one POTS-type telephone device to a radio network for at least one of receiving an incoming call and for making an outgoing call via the radio network;

said wireless-connectivity transceiver means for communicating with a remote wirelessly-enabled transceiver of a mobile handset connected a radio network comprising a wireless-connectivity transceiver capable of being paired with any of a wireless-enabled TDMA-based, GSM-based, CDMA-based, and AMPS-based standard transceiver.